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ABSTRACT

This report reviews state actions concerning pesticide use around schools, including the federal role in school pesticide use, and presents a list of each state's regulations regarding protecting children from pesticide exposure in schools. A case for protecting children is detailed. The report discusses some of the actions states have taken to enhance pesticide protection efforts, such as the creation of restricted spray (buffer) zones around school property, posting notification signs when pesticides are being used, requiring written notification prior to using pesticides, and statutes limiting pesticide use. Also explored is the use of integrated pest management to reduce the need for the unnecessary application of synthetic, volatile pesticides in schools. (Contains 16 endnotes.) (GR)

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1

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The Schooling of State Pesticide Laws – 2000

A review of state pesticide laws regarding schools

Editor's note: This report updates an earlier report released in Pesticides and You, volume 18, no. 3, 1998.

by Kagan Owens and Jay Feldman

Pesticides are poisons, designed to kill and harm living organisms. You, your children, and school personnel are exposed to hazardous pesticides in the school setting. Many schools routinely apply pesticides in classrooms, gyms, playgrounds, athletic fields, cafeterias, and offices. Most schools do not have pest management or pesticide polices. Rather, they contract out for routine spraying of these hazardous chemicals or they use inadequately trained custodial staff. When pesticides are applied on a routine basis, they are often needlessly applied and are frequently overapplied. Children's health and worker safety concerns have caused parents and school employees across the country to take action to reduce pesticide use in the schools. Because of the inadequacies of protection on the federal level, state governments have, in some cases, attempted to step into the breach by regulating pesticide use and in some cases type of pesticide used.

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Beyond Pesticides/NCAMP first surveyed state pesticide laws regarding pesticide use in schools and states that have passed laws attempting to curtail potentially dangerous exposure in the report, *The Schooling of State Pesticide Laws* (1998). Since the publication of this report, several states have passed laws that have addressed one or more of the following five criteria: (i) restricted spray (buffer) zones to address chemicals drifting into school yards and school buildings; (ii) posting signs for indoor and outdoor pesticide applications; (iii) prior written notification for pesticide use; (iv) prohibiting when and where pesticides can be applied; and, (v) requirements for schools to adopt an integrated pest management (IPM) program. These five criteria are essential ingredients in a program to protect children from pesticides used in schools.

Although there continues to be growing movement on this issue, pesticide use policies and practices remain deficient in the protection of children. Without minimum federal stan-

2

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dards, the protection provided children is uneven and inadequate across the country. Just over half of the states, or 31 states, have adopted pesticide acts and regulations that address the protection of children by specifically focusing on pesticide use in, around or near schools.[1] Of these, only 20 states address indoor use of pesticides.[2]

Beyond Pesticides/NCAMP's survey of state requirements and recommendations regarding pesticide use in schools show that:

- Six states recognize the importance of controlling drift by restricting pesticide applications in areas neighboring a school;
- Twelve states require posting of signs for indoor school pesticide applications;
- Twenty-two states require posting of signs for pesticide applications made on school grounds;
- Fifteen states require written notification to students, parents, or staff before a pesticide application is made to schools;
- Nine states restrict when or what pesticides may be applied in schools; and,
- Thirteen states recommend or require schools to use IPM.

These laws are a great victory for children and are instrumental in improving protections from school pesticide use. However, to the extent that these laws do not prohibit the use of toxic pesticides around children and do not treat pesticide exposure as a public health issue by providing universal prior notification of pesticide use, they all to some degree compromise the protection of children. Massachusetts is the first state in the nation to prohibit the use of the most dangerous pesticides in and around schools. Although the Massachusetts' law has some weaknesses, it should be considered, along with Maryland's state school pesticide law, a model for other states, as it is a positive improvement and establishes landmark requirements regarding the use of pesticides.

Federal Role in School Pesticide Use Lacking

The variety of legislative and administrative responses by states has been prompted by concerns about the known and unknown hazards of pesticide use, as well as deficiencies in the federal regulatory review of pesticides. The vast majority of all pesticides registered for use by the U.S. Environmental Protection Agency (EPA) and state governments have never been fully tested for the full range of potential human health effects, such as cancer, birth defects, genetic damage, reproductive effects and neurological disorders. Indeed, pesticides can be registered even when they have been shown to cause adverse health effects. Due to the numerous pesticide formulations on the market, the lack of disclosure requirements, insufficient data requirements, and inadequate testing, it is impossible to accurately estimate the hazards of pesticide products, much less lifetime exposure or risk. Active ingredients are tested individually and are rarely tested in combination with other ingredients, even those identified as synergists. In combination, ingredients can produce synergistic effects, making the particular mix of chemical many times more toxic than individual chemicals. Pesticides can "breakdown" when used to chemicals that are more toxic than the parent compound. Further, we have little control over or knowledge of many of our exposures, thus making determinations of our risks and hazards even more complex.

Many people consider pesticides "safe" because EPA registered the chemicals and allows the public and certified applicators to use it. According to the U.S. General Accounting Office(GAO) report, *Nonagricultural Pesticides: Risks and Regulations* (1986), "EPA believes that no pesticide can be considered 'safe.'"

Just over half of the states, or 31 states, have adopted pesticide acts and regulations that address the protection of children by specifically focusing on pesticide use in, around or near schools.[1] Of these, only 20 states address indoor use of pesticides.[2]

After 30 years on the market, EPA found in 2000 that one of the most commonly used pesticides in the country, chlorpyrifos (Dursban™), poses a significant risk to children, even if used according to the label directions.[3] And even though EPA and the manufacturers of chlorpyrifos agreed to phase-out its use in many settings, including schools, it can continue to be used until existing stocks are used up. The EPA chlorpyrifos announcement begins the process of getting high consumer and children exposure uses of Dursban™ off the market, but puts people at risk by not stopping its uses immediately.

All data available to us today suggest that children face hazards from pesticide use at school that are unacceptable. The U.S. General Accounting Office report, *Use, Effects, and Alternatives to Pesticides in Schools* (1999), confirms that our federal government is not doing enough to protect our nation's most precious resource, our children. The standard that EPA has principally used, according to GAO, "that school classrooms should only be treated when students are not present and that all treated surfaces should be dry before the students are allowed to return," is not a safety standard.[4]

Based on Beyond Pesticides/NCAMP's state survey in 1998, we wrote EPA requesting that it consider rulemaking to protect children from pesticides used in schools. Senator Joseph Lieberman (D-CT) wrote EPA after the publication of the GAO report in January 2000, requesting that EPA collect and review data on school exposures and develop a plan for a comprehensive survey on the use of pesticides in schools to better gauge the threat to students and staff. Today, more than a year and a half since our letter to EPA and nine months since Senator Lieberman's request, the evidence of EPA taking action to reduce exposure to children while at school is not any more clear.

Currently, federal legislation, the *School Environment Protection Act* (SEPA), has been introduced in both the U.S. House of Representatives and U.S. Senate, which establishes a very strong definition of IPM for schools and requires national standards on school pesticide use. In March 2000, the U.S Senate went on record as supporting protection of children from school pesticide use through prior notification (for those pesticides associated with specific adverse effects) to all parents and the use of IPM.[5]

The Case for Protecting Children

The particular vulnerability of infants and children to the harmful effects of pesticides has garnered nationwide attention. In its ground breaking report, *Pesticides in the Diets of Infants and Children* (1993), the National Research Council, an arm of the National Academy of Sciences, confirmed that, "infants and children differ both qualitatively and quantitatively from adults in their exposure to pesticide[s]..."[6] This is because children are not merely "little adults."[7] They are growing and developing. Their metabolic rates are different than adults. There are differences in their ability to process, detoxify and excrete these compounds.

Children are more sensitive to pesticides because of their physiology and behavior. Children take in more pesticides relative to body weight than adults and have developing organ systems that are more vulnerable and less able to detoxify toxic chemicals.[8] Children also have behaviors that expose them to higher levels of toxics than adults. They play on the floor inside and the ground outside. Unwashed hand to mouth activity is frequent. Children ingest dirt accidentally and purposefully. And, they are unlikely to understand or fully appreciate warning signs, even when they can and do read them.

Low levels of pesticide exposure can adversely effect a child's neurological, respiratory, immune and endocrine system. Some of the most commonly used insecticides in schools are nervous system poisons. These pesticides, most of which are in the organophosphate pesticide family, poison children by reducing the body's production of the enzyme cholinesterase, necessary to the transmission of nerve impulses, triggering a range of symptoms from nausea, dizziness, headaches, aching joints to disorientation and inability to concentrate.[9] Other widely used insecticides, synthetic pyrethroids, stimulate nerves causing hypersensitivity and are associated with asthma. Many pesticides affect the immune system, which can result in increased problems with allergies, asthma, hypersensitivity to chemicals and a reduced ability to combat infections and cancer.[10] Many pesticides are linked to cancer. The commonly used weed killer 2,4-D has been linked to non-Hodgkin's lymphoma in scientific studies of farmers.[11] Studies show that children living in households where pesticides are used suffer elevated rates of leukemia, brain cancer and soft tissue sarcoma.[12] The probability of an effect such as cancer, which requires a period of time to develop after exposure, is enhanced if exposure occurs early in life.[13]

GAO documented over 2,300 reported pesticide poisonings in schools between 1993 and 1996.[14] Because most of the symptoms of pesticide exposure, from respiratory distress to difficulty in concentration, are common in school children and may be assumed to have other causes, we suspect that pesticide-related illness is much more prevalent than presently indicated. Of the 48 most commonly used pesticides in schools: 22 can cause cancer, 26 can adversely affect reproduction, 31 are nervous system poisons, 31 can cause liver/kinder damage and 16 can cause birth defects.[15]

Children's exposure to pesticides at school occurs as a result of applications made before children enter the building and sometimes while they are present. The chemical fills the air in the room and settles on desks, counters, shades and walls. Exposure occurs from breathing contaminated air or touching contaminated surfaces. The residues can remain for days and sometimes break down to other dangerous compounds.

School is a place where children need a healthy body and a clear head in order to learn. Teachers and other staff are often forgotten when pest control operators arrive to make treat-

ments after school. The school buildings and grounds are also used after school, on weekends, and during vacations by children and others involved in sports, music, and other extracurricular activities.

Schools often provide an excellent habitat for certain pests. Roaches find a lot of good food stuffed away in forgotten lunch bags. Head lice find it easy to move from host to host where children and their clothing are kept close together all day. Weeds that prefer compacted soils and out compete healthy grasses thrive on school athletic fields. Fortunately, learning to solve pest problems without chemical dependency also teaches students valuable lessons about health, their environment, and decision making.

Many times, if pest control is contracted out, school administrators or facility managers are unaware of the pesticides that are being applied in their schools. Despite all of the evidence, most school administrators are still unaware of the harm to children.

Restricted Spray (Buffer) Zones Around School Property

Pesticides move off the target site when they are sprayed, whether inside or outside. When sprayed outside, pesticides drift on to nearby property resulting in off target residues. Buffer zones can eliminate exposure from spray drift on to school property. As a result, states require buffer zones around schools. In order to adequately protect against drift, buffer zones should, at a minimum, be established in a 2-mile radius around the school's property. Aerial applications should have a larger buffer zone, at least 3 miles encircling the school. Buffer zones should be in effect at all times of the day.

Six states have recognized the importance of controlling drift by restricting pesticide applications in areas neighboring a school. These states, Alabama, Arizona, Louisiana, New Hampshire, New Jersey, and North Carolina, create spray restriction zones that range from 300 feet to 2 1/2 miles. Only in the case of gypsy moth spraying does New Jersey require the largest buffer zone of 2 and 2 1/2 miles, depending on the grade levels of the school. Otherwise, New Jersey sets a 300-foot buffer around schools. Louisiana, New Hampshire, New Jersey and North Carolina buffer zones are in effect for specific hours, either during commuting hours or regular school hours.

Posting Notification Signs for Indoor Pesticide Applications

States use different approaches in providing school pesticide use information to parents, students and staff. Some forms include the posting of notification signs and/or the distribution of notices directly to the affected population. Posted notification signs warn those in the school when and where pesticides have been or are being applied. This is a vehicle for basic right-to-know if the posting occurs in an area where it is easily seen by parents, students (old enough to understand, perhaps 12 or older) and staff. It is important to post signs for indoor pesticide applications because of the extensive period of time students and school employees spend in the school building. Signs posted days before, rather than simply at the time or just after a pesticide application, are more protective. Prior posting may enable people to take precautionary action. Because of the residues left behind after an application, signs should remain posted for 72 hours. Signs should also be posted at all main entrances of the buildings and the specific area treated. Posted signs should state when and where a pesticide is applied, the name of the pesticide applied, and how to get further information, such as a copy of the material safety data sheet (MSDS)[16] and product(s) label. Signs should be posted when a hired, commercial applicator, or school staff applies pesticides.

Twelve states require posting of signs for indoor school pesticide applications. Four states require posting before commencement for a specific time period. New York and Texas, the two strongest states in this regard, require posting warning signs at least 48 hours in advance of the application. Five states require signs to remain posted for a specific amount of time following the application. California has the strongest requirement, requiring signs to remain posted for 72 hours after the application. Virginia does not require schools to post notification signs, but does have a resolution recommending schools adopt such a provision.

Posting Notification Signs for Outdoor Pesticide Applications

For a wider range of protection, states should require posting pesticide notification signs for outdoor pesticide applications as well. Students who play sports or people continually on the lawns are at high risk when pesticide applications occur.

Twenty-two states have posting requirements when pesticide applications are made on school grounds. Massachusetts requires signs to be posted 48 hours in advance of the pesticide application in school buildings and on school grounds. New York requires signs to be posted 48 hours in advance, at child drop-off points, prior to pesticide applications in daycare centers. States should require signs to remain posted for at least 72 hours, as California and Rhode Island do. Seven states do not have any other requirements except posting requirements for school lawns. Nine states require posting for both indoor and outdoor pesticide applications. Connecticut and Georgia law specifically state that posting warning signs is required outdoors when a structural application continues outside the building. Massachusetts and Wisconsin require signs to be posted when pesticides are applied on nearby property.

Prior Written Notification

Written notification prior to each pesticide use is a good way to make sure that all parents, children and staff are aware and warned. Limited notification-based registries, as contrasted with universal notification for everyone, is a less effective

How States Around the Country Protect Children from Pesticide Exposure in Schools

State	Buffer Zones	Posting Signs[1]	Prior Notification	IPM	Prohibition of Use
Alabama	Aerial application, 400 feet.				
Arizona	Ground & aerial application, ¼ mile, certain odoriferous & highly toxic pesticides.	Indoor & outdoor, school district establish posting requirements.	Parent & staff, universal 48 hour notice.		
California[2]		Indoor & outdoor, post sign 24 hours prior to application, remain 72 hours.	Parent & staff registry, 72 hour notice.	Recommends.	
Connecticut		Outdoor & structural applications made to perimeter of building.	Parents & staff registry, 24 hour notice.	Recommends.[3]	Pesticide applications prohibited during operating hours.
Florida		Outdoor, post sign beginning of application, no specifics on time to remain posted.		Recommends.[4]	
Georgia		Indoor, prior posting, remain 24 hours Outdoor, prior posting, remain until the following day.			
Hawaii				Defines.[5]	
Illinois		Outdoor, post sign, remove following day.	Parent registry or universal notification, school decision, 48 hour notice.	Requires.[6]	
Louisiana	Aerial application, 1000 feet, during school hours.		Parent registry, medical verification required, no time specified.	Requires.[7]	Pesticide applications of restricted use pesticides, entry restricted for 8 hours after application.
Maine		Indoor & outdoor, post prior to application, remain 48 hours.		Recommends.[8]	
Maryland		Indoor & outdoor, "in-school notification" for all pesticide use in secondary schools. Indoor, "in school notification" for bait stations in elementary schools. Outdoor, post sign at time of application, remain 48 hours.	Parent & staff, elementary school, universal 24 hour notice. Parent & staff, secondary school, registry, 24 hour notice.	Requires.	
Massachusetts		Indoor, post prior to application. Outdoor, post sign 48 hours prior to application, remain 72 hours. Aerial agricultural applications within 500 feet of school, post sign 10 hours prior, remain 48 hours.	Parent & staff, universal notification, outdoor applications. Parent & staff registry, indoor application, no time specified.	Requires.	Pesticide use prohibited when children present. Outdoor, pesticides that are known, likely or probable carcinogens, contain a "List 1" inert ingredient or for aesthetic reason alone are prohibited from use. Indoor, certain pesticides are prohibited from use.
Michigan		Indoor, post sign after application, remain 48 hours. Outdoor, post sign after application, remain 24 hours.	Parent registry, 24 hour notice.	Requires.[9]	Indoor, spray or aerosol insecticide, entry restricted for 4 hours after application. Outdoor, prohibits spray insecticide, 100 ft outside occupied area.
Minnesota			Parent registry, notification at "reasonable" time before application.	Defines.[10]	
Montana		Indoor, post sign at time of application, remain "until dry."		Recommends.[11]	
New Hampshire	Aerial application, during commuting hours & outdoor activity in sensitive areas.	Outdoor, post sign, remain 24 hours.			Pesticides cannot be applied "where exposure may have an adverse effect on human health."[12]

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How States Around the Country Protect Children from Pesticide Exposure in Schools

State	Buffer Zones	Posting Signs[1]	Prior Notification	IPM	Prohibition of Use
New Jersey	Ground & aerial gypsy moth application, during commuting hours, 2 miles grade school, 2½ miles high school. Aerial application, 300 feet.	Indoor, permanent posting at central bulletin board, states next application date. Outdoor, post sign at start of application, remain 24 hours.	Parent & staff registry, no time specified.		Pesticide application prohibited during normal school hours or when area will be occupied within time for product to dry.
New Mexico			Parent registry, no time specified. Parent and staff universal notification, childcare center, 48 hour notice.		Prohibits use of certain pesticides when area occupied or will be for next 6 hours. Licensed childcare centers use of pesticides prohibited when children on premises.
New York		Indoor & outdoor, daycare center, post sign 48 hours prior to application. Outdoor, post sign, remain 24 hours.	Parent & staff registry, no time specified. Parent & staff, automatic notification 3 times a year, after application.	Recommends.[13]	
North Carolina	Aerial application, 300 feet, when school occupied.				
Oregon				Defines.[14]	
Pennsylvania			Parent & staff registry, medical verification required, school application & within 500 feet of school property, 12 to 72 hour notice.	Defines.	No applications in "common access areas" during normal school hours or extra-curricular activities, restricted entry 7 hours after application.
Texas		Indoor, post sign 48 hours prior to application, no specifics on time to remain posted.	Parent registry, indoor application, no time specified.	Requires.	Pesticides are grouped into lists. No indoor application of certain Green List when students in area. Other Green List & Yellow & Red List, restrict entry for 12 hours after application. Outdoor applications, Green List – students must be 10 feet away, Yellow List - 10 feet away, 12 hours restricted entry, Red list 50 feet away, 12 hour restricted entry.
Virginia		Resolution recommending schools adopt posting.	Resolution recommending schools adopt prior notification.		
Washington		Outdoor, post sign.		Defines.[15]	
West Virginia		Indoor, day care center, post sign 24 hours prior to application, no specifics on time to remain posted.	Day care employees, automatic 24 hour notice, level 3 or 4 pesticide. Parent registry, schools & day care centers, 24 hour notice of level 3 or 4 pesticide.	Requires.	Pesticides are grouped into levels. Students & employees restrict entry for 4 hours after level 3 pesticide & 8 hours after level 4 pesticide.
Wisconsin		Outdoor, post sign prior to application, remain until sunset following day. Farms within 300 feet of school, during duration of restricted entry pesticides.			

[1] Seven states require posting notification signs for outdoor lawn applications: Colorado, Indiana, Iowa, Kentucky, Ohio, Rhode Island, and Vermont. These states are not included because this is the only requirement the states have adopted to protect children and staff while at school.

[2] At printing time, the California law regarding school pesticide use, the *Healthy Schools Act*, is awaiting the Governor's signature.

[3] Connecticut recommends schools develop IPM plan and requires technical schools have an IPM plan.

[4] Florida State Board of Education Administrative Rules states that school boards should adopt policies and procedures for pest management programs that are in accordance with U.S. EPA, *Pest Control in the School Environment: Adopting Integrated Pest Management*, August 1993.

[5] Hawaii state agencies are required to establish guidelines and review IPM procedures.

[6] Illinois requires IPM for structural pest management only. Law has a strong definition of IPM.

[7] Louisiana requires schools to have IPM polices. State law recommends the use of least toxic option, but definition does not state priority to use least toxic option.

[8] Maine does not define IPM in its laws, but states that state "agencies shall promote the principles and implementation of IPM."

[9] Michigan requires IPM plans be developed for indoor pest management only.

[10] Minnesota law states that if a school is going to tout having an IPM program, it must fit the definition in the law.

[11] Montana law does not define IPM. The regulation discusses IPM, stating, "When pesticide treatment is necessary, the least toxic and most target-specific pesticide is chosen." The state has developed a model policy that defines IPM as using all methods.

[12] Although this language is open to interpretation, it is a stronger safety standard than that contained in the *Federal Insecticide, Fungicide and Rodenticide Act* (FIFRA) which protects for "unreasonable adverse effects."

[13] New York State Board of Regents, State Education Department, adopted recommendations that incorporated the essential elements of an IPM plan and notification.

[14] Oregon only requires IPM for state agencies and higher education facilities.

[15] Washington only requires IPM for state agencies and higher education facilities.

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means of notifying people and does not qualify as right-to-know because of its limited scope. Requiring that individuals place themselves on registries, sometimes only with a doctor's letter, affords only those who already understand concerns about toxic exposure the opportunity to be informed about pesticide use in the school. Registries also tend to be more costly and time consuming for the school to operate. For large school districts, it may require an extra staff person to keep the registry up-to-date and coordinate the notification. Prior notification should be 72 hours in advance to make sure the information has been received, to get further information regarding the pesticide, and to make arrangements to avoid the exposure, if necessary. Notification should state when and where a pesticide is to be applied, the name of the pesticide, the pesticide's adverse effects and how to get further information, such as a copy of the MSDS and product label.

Fifteen states have requirements to notify parents or school staff in writing before a pesticide application is to occur. Of these, seven states have provisions for universal notification. Six states have provisions for universal notification prior to the application, and one state, New York, requires notification three times a year, after the application has taken place. Arizona requires universal notification to all parents and staff in both primary and secondary schools. Maryland, Massachusetts and New Mexico require universal prior notification for only certain pesticide applications, depending on either type of school or where the application is to occur. Illinois leaves the decision to establish a registry or provide universal notification to the school. Thirteen states have provisions for prior notification for individuals listed on a registry. Louisiana and Pennsylvania require medical verification to be listed on a registry. Ten states' prior notification requirements, whether universal or registry, provide notice to both parents and school staff. Seven states require the posting of signs for indoor and outdoor applications and provide prior notification of a school pesticide application, which constitutes the widest range of notification activities. Arizona is the only state that makes provisions for students and staff who are not able to attend school because of the pesticide application. Virginia addresses the issue of pre-notifying people when pesticides are used in schools, but does not require it.

Prohibitions on Use

Limiting when and what pesticides are applied in and around schools is important to the reduction of pesticide exposure. Pesticides should never be applied when students or staff are, or are likely to be, in the area within 24 hours of the application. Nine states restrict the type and/or timing of pesticides that may be used in a school. In reality, certain types of pesticides, such as carcinogens, endocrine disrupters, reproductive toxins, developmental toxins, neurotoxins and pesticides listed by EPA as a toxicity category I or II pesticide, should never be used around children. Massachusetts is the only state that bans the use of certain pesticides by schools. Connecticut, New Jersey and New Mexico prohibit applying pesticides during school hours. Louisiana, Michigan, New Mexico, Pennsylvania, Texas and West Virginia have established entry restrictions for hours following an application. Texas has the strongest of such re-entry restrictions, requiring that the area treated with certain pesticides remain unoccupied for 12 hours after the application.

Integrated Pest Management

A good integrated pest management (IPM) program can eliminate the unnecessary application of synthetic, volatile pesticides in schools. The main elements of a good IPM program include: 1) monitoring to establish whether there is a pest problem, 2) identifying the causes of the pest problem, 3) addressing the cause by changing conditions to prevent problems, 4) utilizing pest suppression techniques, if necessary, that are based on mechanical and biological controls, and 5) only after nontoxic alternatives have been tried and exhausted, use the least toxic pesticide, as clearly defined. An IPM program should include a written policy guide and a prohibited and acceptable materials list. Monitoring eliminates the need for scheduled pest control visits and thus the unnecessary use of chemicals. A successful school IPM program relies heavily on good communication between all school users and personnel.

Least toxic control products are a major growth area and new materials and devices are increasingly available in the marketplace. Materials that could be considered after using other nontoxic methods include boric acid and disodium octobrate tetrahydrate, silica gels, diatomaceous earth, nonvolatile insect and rodent baits in tamper resistant containers or for crack and crevice treatment only, microbe-based insecticides, botanical insecticides (not including synthetic pyrethroids) without toxic synergists, biological, living control agents, such as parasites and predators, soap-based products, and products that do not contain hazardous inert ingredients or contaminants listed on the pesticide label.

It is important to remember when controlling a pest problem to look for long-term solutions not just a temporary control, a key ingredient to cutting pest management costs. Instead of addressing the cause of pest problems, many pesticides only treat the symptoms, without changing the structural problems that create an environment conducive to their existence. Pesticides are often ineffective over the long term and the most common pests are now resistant to many insecticides. Any openings that pests are using to access the structure should be caulked, screened or repaired. Efforts to eliminate food sources can eliminate the pest problems.

Eighteen states define, recommend or require IPM in their state laws. Of these, only seven states require that schools adopt an IPM program. Six states recommend that schools use an IPM program. And, five states' laws define IPM, but do not require or recommend implementation in their schools. Unfortunately, IPM is a term that is used loosely with many different definitions. More and more, we hear pest control programs inaccurately described as IPM. Of the eighteen states, California, Illinois, Maryland, Massachusetts and Minnesota, have

comprehensive definitions of IPM, and allow only the least toxic pesticide to be used as a last resort. Connecticut, Florida, Louisiana, Michigan, Oregon, Pennsylvania, Texas, and Washington, define IPM as using all methods of pest management that are available, giving equal emphasis to pesticides, usually stated as the "judicious use of pesticides." And four states, Hawaii, Maine, Montana and New York, fall somewhere in-between because the law does not clearly, if at all, define IPM in the law. For effective, least-hazardous pest management to occur, it is important that IPM is clearly defined.

Conclusion

Raising the level of protection across the nation to meet the highest possible standard of protection for children is essential. Where a state offers protection not provided by your state, advocate for it. Where policies exist, make sure that they are enforced. Enforcement of existing pesticide laws is also critical and often the most difficult phase of community-based efforts. Both the adoption of laws and ensuring their enforcement once adopted, require vigilant monitoring and public pressure. Exemptions that waive notification requirements before or after pesticide use, such as during school vacations, undermine protection.

While this review shows that over half the states have taken some action, it describes limited action. Nearly half the states are silent on these critical issues. The degree of state activity suggests a level of concern that can and should lead to increased protection in the future. Parents and community members can help school districts improve their pest control practices by contacting the district and encouraging the implementation of an IPM and notification program. School administrators will be more conscious of their pest control policy if they know parents are concerned about this issue and tracking their program.

For information on state pesticide laws, local government and school districts that have passed school policies, and tools on how to get such policies at the federal, state and local level adopted, please contact Beyond Pesticides/NCAMP or see www.beyondpesticides.org.

Endnotes

1. This review is intended to determine what each state's provisions are under its statutes and regulations regarding school pesticide use. It does not evaluate the enforcement or quality of the program that may be in place. This report does not fully examine all the administrative materials that have been developed or policies that may be adopted on the local level. This survey includes California and the provisions of the Healthy Schools Act 2000, which is expected to be signed by the Governor at time of publication.
2. States that "address" indoor use of pesticides are based on whether the state recommends or requires schools post notification signs for indoor pesticide applications, provide prior notification of an indoor pesticide application, establish IPM program, or prohibit the use of certain pesticides in school buildings. States include: Arizona, California, Connecticut, Florida, Georgia, Illinois, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Montana, New Jersey, New Mexico, New York, Pennsylvania, Texas, Virginia and West Virginia.
3. U.S. Environmental Protection Agency, Prevention, Pesticides and Toxic Substances, *Chlorpyrifos revised Risk Assessment and Agreement with Registrants*, Washington, DC, June 2000.
4. U.S. General Accounting Office (GAO), *Use, Effects, and Alternatives to Pesticides in Schools*, RCED-00-17, November, 1999, p. 4.
5. The U.S. Senate unanimously approved an amendment to the *Education Savings Account Bill*. S-1134 by Senator Barbara Boxer (D-CA) on March 2, 2000.
6. National Research Council, National Academy of Sciences, *Pesticides in the Diets of Infants and Children*, Washington, DC: National Academy Press, 1993, p.3.
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